

REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are unpatentable under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of the presented claims are in condition for allowance.

I. REJECTION OF CLAIMS 1-5, 7-13, 15-16 AND 39 UNDER 35 U.S.C. §103

The Examiner rejected claims 1-5, 7-13, 15-16, and 39 as being unpatentable under 35 U.S.C. §103(a) over the Boivie et al. patent (U.S. Patent No. 6,415,312, issued July 2, 2002, hereinafter referred to as “Boivie I”) in view of the Wu patent (U.S. Patent No. 6,601,208, issued July 29, 2003, hereinafter “Wu”) and further in view of the Boivie et al. patent (U.S. Patent No. 6,625,773, issued September 23, 2003, hereinafter referred to as “Boivie II”). The Applicants respectfully traverse the rejection.

The Examiner’s attention is respectfully directed to the fact that Boivie I, Wu, and Boivie II singly or in any permissible combination, fail to teach or suggest a method for distributing content in which a server (i.e., a source of a packet) selects all of the intermediate receivers or nodes through which the packet should travel to its final destination (i.e., a receiver), as recited in Applicants’ independent claims 1 and 9.

The Examiner acknowledges that Boivie I “does not teach wherein the server selects all of the one or more intermediate receivers in the at least a portion of the multicast distribution tree” (Final Office Action, Page 3). Wu also fails to teach or suggest this feature. However, the Examiner submits that the admitted gap in the teachings of Boivie I and Wu is bridged by Boivie II. The Applicants respectfully disagree.

By contrast, the system taught by Boivie II includes a plurality of routers that “[p]erform a route table lookup to determine the ‘next hop’ for each of the destinations listed in [a] packet” (Boivie, column 4, lines 20-21, emphasis added). That is, the path for packet forwarding (i.e., the series of routers or intermediate receivers through which the packet passes) is determined by the routers, which use locally stored information (i.e., the lookup tables) in order to determine the path “on the fly”. The path is not defined in advance by the server (or “source,” which the Examiner appears to equate

with the claimed server), as recited in independent claims 1, 9, 17, 23, and 32. Thus, the source in Boivie II's system may define who the endpoint receiver of a packet is, but the source has no control over how the packet gets to the receiver (i.e., the paths that the packet travels through the network). Moreover, nowhere in Boivie II is it stated or suggested that the source may define all of routers (intermediate receivers) the packet should travel through to reach the receivers.

The cited portions of Boivie II at best teach that the source selects only the first intermediate receiver (e.g., router) through which the packet should travel. All subsequent intermediate receivers are selected by other intermediate receivers. For example, column 5, lines 18-30 teach that source node A sends a packet to a first router R1, and that the header of the packet tells the first router R1 who the ultimate recipients of the packet should be. Column 3, lines 37-40 of Boivie II teaches essentially the same thing ("In the example shown [in FIG. 1], source node A can send a multicast transmission to destination nodes B, C, and D by sending a transmission (including a packet or set of packets) to an intermediate node Ra that includes the desired list of destinations B, C, and D.").

Column 4, lines 36-40, which the Examiner also cites, actually supports the Applicants' contention that the source node does not select all of the intermediate receivers, but at best selects only the first intermediate receiver. Specifically, column 4, lines 36-40 states: "[the first router] R1 will send a single packet on to [a second router] R2 with a destination list of <B C D> and R2 will send a single packet to [a third router] R3 with the same destination list." The method by which the first router R1 identifies the second router R2 (and likewise how the second router R2 identifies the third router R3) is discussed a few paragraphs earlier at column 4, lines 20-31: "[t]he processing that a router [e.g., R1] does on receiving one of these ... packets is as follows: Perform a route table lookup to determine the 'next hop' for each of the destinations listed in the packet ... " (emphasis added). Thus, except for the first router ("intermediate receiver"), all of the routers are chosen dynamically by the immediately previous routers. Most of the routers in the transmission path are chosen by lookup table and not by instruction from the source. As such, the source node according to Boivie II cannot select all of the

intermediate receivers of the packet, as claimed by the Applicants, but at best can select only the first intermediate receiver.

Thus Boivie I, Wu, and Boivie II singly or in any permissible combination, fail to teach or suggest all of the limitations recited in Applicants' independent claims 1 and 9. Specifically, Applicants' claims 1 and 9 positively recite:

1. A method for distributing content from a server to a plurality of receivers, wherein said content is packetized into one or more packets, comprising:

establishing a multicast distribution tree rooted at the server; and
directing, by the server, transmission of each of the one or more packets along at least a portion of the multicast distribution tree, the at least a portion of the multicast distribution tree comprising one or more intermediate receivers through which the each of the one or more packets must travel to reach the plurality of receivers, wherein the server selects all of the one or more intermediate receivers in the at least a portion of the multicast distribution tree,

wherein the server defines a different set of the one or more intermediate receivers for each of said one or more packets,

and wherein at least some of the one or more packets are encoded with forward error correction coding. (Emphasis added)

9. A method for distributing content from a server to a plurality of receivers, wherein said content is packetized into at least one packet, comprising:

establishing a multicast distribution tree rooted at the server; and
directing, by the server, transmission of the at least one packet along at least a portion of the multicast distribution tree, the at least a portion of the multicast distribution tree comprising one or more intermediate receivers through which the at least one packet must travel to reach the plurality of receivers, wherein the server selects all of the one or more intermediate receivers,

wherein the plurality of receivers and the one or more intermediate receivers are defined by the server,

and wherein at least some of the one or more packets are encoded with forward error correction coding. (Emphasis added)

Since Boivie I, Wu, and Boivie II singly or in any permissible combination, fail to teach or suggest a method for distributing content in which a server at which a packet originates selects all of the intermediate receivers or nodes though which the packet should travel to its final destination (i.e., a receiver), Boivie I in view of Wu and further in view of Boivie II does not teach or suggest each and every element of Applicants'

independent claims 1 and 9. Moreover, dependent claims 2-5, 7-8, 10-13, 15-16, and 39 depend, respectively, from independent claims 1 and 9, respectively and recite additional features. As such, and for at least the same reasons set forth above with respect to claims 1 and 9, the Applicants submit that claims 2-5, 7-8, 10-13, 15-16, and 39 are also not made obvious and are allowable.

Therefore, Applicants contend that claims 1-5, 7-13, 15-16, and 39 are patentable over Boivie I in view of Wu and further in view of Boivie II and, as such, fully satisfy the requirements of 35 U.S.C. §103(a). Thus, Applicants respectfully request that the rejection of claims 1-5, 7-13, 15-16, and 39 under 35 U.S.C. §103(a) be withdrawn.

II. CONCLUSION

Thus, the Applicants submit that all of the presented claims fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all of these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Kin-Wah Tong, Esq. at (732) 842-8110 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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Date



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